

WHAT IS CLAIMED IS:

1. An explicit routing method in a label switching system,
comprising:

5 a step of logically dividing a label switching router (LSR)
into a plurality of LSRs each having a label switching function;
and

a step of specifying, when setting a label switched path
on the basis of an explicit route specified, a port or a port
group of an egress node.

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2. An explicit routing method in a label switching system,
comprising:

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15 a step of flooding, as topology data, a set of an
intra-system port and an IP address allocated to the port, or
a set of a port group among a plurality of groups into which
the ports are divided, and an IP address allocated to the port
group; and

20 a step of managing the topology data flooded from other
system and, when setting a label switched path on the basis of
an explicit route specified, explicitly specifying a port or
a port group of an egress node, and a port or a port group of
a relay node on the basis of the received topology data.

25 3. An explicit routing method in a label switching system,
comprising:

a step of flooding, as topology data, a set of an
intra-system port and an IP address allocated to the port, or

a set of a port group among a plurality of groups into which the ports are divided, and an IP address allocated to the port group.

5 4. An explicit routing method in a label switching system, comprising:

 a step of flooding, as topology data, a set of an intra-system port and an IP address allocated to the port, or a set of a port group among a plurality of groups into which the ports are divided, and an IP address allocated to the port group by use of Opaque LSA of OSPF protocol.

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 5. An explicit routing method in a label switching system, comprising:

15 a step of explicitly specifying, when setting a label switched path on the basis of an explicit route specified, a port or a port group of an egress node, and a port or a port group of a relay node.

20 6. An explicit routing method in a label switching system according to claim 5, further comprising:

 a step of specifying a port or a port group of the egress node by setting an IP address corresponding to the port or the port group of the egress node in final ER-HOP-TLV in ER-TLVs in Label Request Message of CR-LDP; and

 a step of specifying a port or a port group of the relay node by setting an IP address corresponding to the port or the

port group of the relay node in intermediate ER-HOP-TLV in ER-TLVs
in Label Request Message of the CR-LDP.

7. An explicit routing method in a label switching system
5 according to claim 5, further comprising:

a step of specifying the port or the port group of the
egress node and the port or the port group of the relay node
by adding an intra-system port number or an intra-system port
group number in ER-HOP-TLV in ER-TLVs in Label Request Message
10 of CR-LDP.

8. An explicit routing method in a label switching system
according to claim 5, further comprising:

a step of explicating a port through which data should
15 pass per system and specifying a port or a port group of the
egress node by use of resource class TLV with ER-TLV in Label
Request Message of CR-LDP being used as ER-HOP-TLV.

9. An explicit routing method in a label switching system
20 according to claim 5, further comprising:

a step of specifying a port or a port group of the egress
node by setting an IP address corresponding to the port or the
port group of the egress node in final Subject-object in Explicit
Route Objects in a path message of RSVP protocol extended for
25 setting a label switched path in MPLS protocol; and

a step of specifying a port or port group of the relay
node by setting an IP address corresponding to the port or the

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port group of the relay node in intermediate Subject-object in Explicit Route Objects in the path message of the RSVP protocol.

10. An explicit routing method in a label switching system
5 according to claim 5, further comprising:

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a step of specifying a port or a port group of the egress node and a port or a port group of the relay node by adding an intra-system port number or an intra-system port group number in Subject-object in Explicit Route Objects in the path message
10 of RSVP protocol extended for setting the label switched path in MPLS protocol.

11. An explicit routing method in a label switching system, comprising:

15 a step of specifying an MPLS explicit route by adding, to an IP-over-MPLS (IP/MPLS) forwarding function of one specified egress-and-ingress port group, a communication function with the IP/MPLS forwarding function of an intra-system other port group, and a forwarding function to the intra-system other port
20 group.

12. A packet router in a label switching system, comprising:

a logical router configuring module for logically dividing
25 a label switching router (LSR) into a plurality of LSRs each having a label switching function; and

a module for specifying, when setting a label switched

path on the basis of an explicit route specified, a port or a port group of an egress node.

13. A packet router in a label switching system,
5 comprising:

a module for flooding, as topology data, a set of an intra-system port and an IP address allocated to the port, or a set of a port group among a plurality of groups into which the ports are divided, and an IP address allocated to the port group; and

10 a module for managing the topology data flooded from other system and, when setting a label switched path on the basis of an explicit route specified, explicitly specifying a port or a port group of an egress node, and a port or a port group of
15 a relay node on the basis of the received topology data.

14. A packet router in a label switching system,
comprising:

a module for flooding, as topology data, a set of an
20 intra-system port and an IP address allocated to the port, or a set of a port group among a plurality of groups into which the ports are divided, and an IP address allocated to the port group.

25 15. A packet router in a label switching system,
comprising:

a module for flooding, as topology data, a set of an

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intra-system port and an IP address allocated to the port, or a set of a port group among a plurality of groups into which the ports are divided, and an IP address allocated to the port group by use of Opaque LSA of OSPF protocol.

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16. A packet router in a label switching system, comprising:

a module for explicitly specifying, when setting a label switched path on the basis of an explicit route specified, a port or a port group of an egress node, and a port or a port group of a relay node.

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17. A packet router in a label switching system according to claim 16, further comprising:

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a module for specifying a port or a port group of the egress node by setting an IP address corresponding to the port or the port group of the egress node in final ER-HOP-TLV in ER-TLVs in Label Request Message of CR-LDP; and

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a module for specifying a port or a port group of the relay node by setting an IP address corresponding to the port or the port group of the relay node in intermediate ER-HOP-TLV in ER-TLVs in Label Request Message of the CR-LDP.

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18. A packet router in a label switching system according to claim 16, further comprising:

a module for specifying the port or the port group of the egress node and the port or the port group of the relay node

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intra-system port number or an intra-system port group number in Subject-object in Explicit Route Objects in the path message of RSVP protocol extended for setting the label switched path in MPLS protocol.

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22. A packet router in a label switching system, comprising:

a module for specifying an MPLS explicit route by adding, to an IP/MPLS forwarding function of one specified

10 egress-and-ingress port group, a communication function with the IP-over-MPLS (IP/MPLS) forwarding function of an intra-system other port group, and a forwarding function to the intra-system other port group.

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by adding an intra-system port number or an intra-system port group number in ER-HOP-TLV in ER-TLVs in Label Request Message of CR-LDP.

5 19. A packet router in a label switching system according to claim 16, further comprising:

 a module for explicating a port through which data should pass per system and specifying a port or a port group of the egress node by use of resource class TLV with ER-TLV in Label

10 Request Message of CR-LDP being used as ER-HOP-TLV.

 20. A packet router in a label switching system according to claim 16, further comprising:

 a module for specifying a port or a port group of the egress
15 node by setting an IP address corresponding to the port or the port group of the egress node in final Subject-object in Explicit Route Objects in a path message of RSVP protocol extended for setting a label switched path in MPLS protocol; and

 a module for specifying a port or port group of the relay
20 node by setting an IP address corresponding to the port or the port group of the relay node in intermediate Subject-object in Explicit Route Objects in the path message of the RSVP protocol.

 21. A packet router in a label switching system according
25 to claim 16, further comprising:

 a module for specifying a port or a port group of the egress node and a port or a port group of the relay node by adding an

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